# Year-of-the-Ocean Drifter Project

Sarah Schoedinger
National Oceanographic Partnership Program Office
1755 Massachusetts Ave., N.W., Suite 800
Washington, D.C. 20036
phone: (202) 232-3900 fax: (202) 986-5072 email: sschoedinger@brook.edu

Mark Swenson
Atlantic Meteorlogical and Oceanographic Laboratory
4301 Rickenbacker Causeway
Miami, FL 33149
phone: (305) 361-4363 fax: (305) 361-4582 email: swenson@aoml.noaa.gov

Sharon Walker
University of Southern Mississippi
Institute of Marine Sciences
J.L. Scott Marine Education Center and Aquarium
P.O. Box 7000
Ocean Springs, MS 39566-7000
phone: (228) 374-5550 fax: (228) 374-5559 email: shwalker@seahorse.ims.usm.edu

Award #: N0001498F0253 and N000149810876

## LONG-TERM GOAL

Our long-term goal is to provide a mechanism for translating current oceanographic research to a broad audience and enhance science and math instruction at the K-12 level.

## OBJECTIVES

Specific objectives for this project include providing K-12 educators and their students real data in a useful format while at the same time helping oceanographers to study ocean currents, transport of heat, sediment, larvae, and pollutants, as well as to provide ground-truthing of remotely sensed optical data.

## APPROACH

A multi-agency meeting that included representatives of the educational community was held to develop the research and educational goals of the project for FY 1998. It was decided that standard Lagrangian drifters were to be purchased to augment the current distribution of buoys already afloat. The areas of deployment would be the Caribbean Sea and Tropical Atlantic Ocean. In addition, 10 drifters equipped with optical sensors were to be purchased for ground-truthing remotely sensed ocean color data. Personnel at the GLOBE program at NASA and the Department of Energy's Oak Ridge National Laboratory were to provide expertise in developing the web site so that it is visually interesting to the public at-large and can be used by students and teachers to learn more about research using drifters.

# Report Documentation Page

*Form Approved*
*OMB No. 0704-0188*



| 1. REPORT DATE | 2. REPORT TYPE | 3. DATES COVERED |
|---|---|---|
| **1998** | | **00-00-1998 to 00-00-1998** |

| 4. TITLE AND SUBTITLE | 5a. CONTRACT NUMBER |
|---|---|
| **Year-of-the-Ocean Drifter Project** | 5b. GRANT NUMBER |
| | 5c. PROGRAM ELEMENT NUMBER |
| 6. AUTHOR(S) | 5d. PROJECT NUMBER |
| | 5e. TASK NUMBER |
| | 5f. WORK UNIT NUMBER |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **National Oceanographic Partnership Program Office,1755 Massachusetts Ave., N.W., Suite 800,Washigton,DC,20036** | 8. PERFORMING ORGANIZATION REPORT NUMBER |
| 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) | 10. SPONSOR/MONITOR'S ACRONYM(S) |
| | 11. SPONSOR/MONITOR'S REPORT NUMBER(S) |

12. DISTRIBUTION/AVAILABILITY STATEMENT
**Approved for public release; distribution unlimited**

13. SUPPLEMENTARY NOTES
**See also ADM002252.**

14. ABSTRACT

15. SUBJECT TERMS

| 16. SECURITY CLASSIFICATION OF: | | | 17. LIMITATION OF ABSTRACT | 18. NUMBER OF PAGES | 19a. NAME OF RESPONSIBLE PERSON |
|---|---|---|---|---|---|
| a. REPORT | b. ABSTRACT | c. THIS PAGE | | | |
| **unclassified** | **unclassified** | **unclassified** | **Same as Report (SAR)** | **3** | |

The web site offers activities for classroom including:

- An explanation for reasons for the research
- Actvities for the classroom provided at no-cost to K-12 teachers and students
- Links to other ocean drifter databases
- Links to other drifter programs
- An “Ask-an Oceanographer” feature
- “Drifter News” feature
- A map for tracking drifters in the Caribbean and Tropical Atlantic.

**WORK COMPLETED**

The web site has been developed (http://doe.drifters.gov) and is maintained by personnel at the Department of Energy’s Oak Ridge National Laboratory. Two of the educational activities involving tracking drifters and making drifters are already available. Other relevant educational activities are in development under the guidance of Dr. Sharon Walker and include on-line classroom activities and displays for 22 aquaria around the United States. The USGS has developed a map of the Caribbean and Tropical Atlantic Ocean for students and teachers to track drifters. The map is available to the public for free. The Atlantic Meteorological and Oceanographic Laboratory (AOML) personnel provide updates of the drifter positions and SST in 3-day segments. They also handle the procurement of the drifters. The GLOBE Program at NASA is continuing to provide visualizations of these data for web site. Five of the 10 optical drifters and about 75 of the 140 standard Lagrangian drifters that were purchased for this project have been deployed. Deployments of the remaining drifters will occur as ships of opportunities arise in early 1999.

**RESULTS**

Web site usage has grown steadily and will continue to do so once the remainder of the educational activities are available on-line and the displays are in public aquaria. Researchers have been using the data primarily for studying currents and SST. For some specific examples of results look at <http://drifters.doe.gov/results/>.

**IMPACT/APPLICATION**

This project will provide researchers with new information about the Caribbean and Tropical Atlantic waters and these data will augment the historical database of Sea Surface Temperature (SST). Ground-truthing of remotely sensed ocean color (e.g., with SeaWiFS) will also be possible.

The web site allows the K-12 community to study the oceans with timely data that researchers are also using by providing “hands-on” classroom activities for students and teachers. By being able to incorporate real data into their classroom activities, students and their teachers are able see first-hand the dynamic and, often, unpredictable nature of observational research.

**TRANSITIONS**

1- Kevin Leaman at the University of Miami-Rosenstiel School is looking at the Panama-Colombian Gyre in the Caribbean Sea with Doug Wilson at AOML and Maria Donoso at the Water Center for the Humid Tropics of Latin America and the Caribbean in Panama.

2- Doug Wilson at AOML is using these data to understand the genesis of the Gulf Stream.